

TO: MFD

On (note date): 1 DEC 2004 Pat. No. 6817603

Team Leaders Initials

INFO SUPPLIED BY: 145

OAC/LDRC Initials

91930239

**SECOND REQUEST (DIFFERENT CORRECTIONS), SUPERSEDE OR RECONSIDERATION  
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MRD (for request attached to this cover sheet): / / (Team Leader have LDRC stamp same MRD on 1050s)

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MRD: / / Examiner (LIE's initials): \_\_\_\_\_

Date Assigned: / / Turned In: / /

CofC Issued: / / CofC Denied: / / Updated: Y / N Date: / /

Patent number listed on C of C listing in OG (circle one) Y / N

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New/different correction(s) requested. Check Intranet or with RTIS. (circle one) Y / N

Duplicate (same heading and corrections published/issued CofC on Intranet, (circle one) Y / N

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Reconsideration  Supersede  Special CofC  Erratum  Expedite CofC

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JW or OL, locate request for CofC published on: / / and return to: \_\_\_\_\_  
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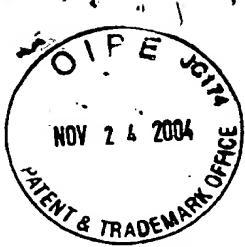
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Comments/ Instructions: \_\_\_\_\_

SEE REVERSE SIDE, FOR ADDITIONAL COMMENTS/INSTRUCTIONS

(Revised 12/15/2003 cbn) #4



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Bent Karsten KOFOD Confirmation No.: 9485  
Patent No.: 6,817,603 B2 Application No.: 09/930,239  
Patent Date: November 16, 2004 Filing Date: August 16, 2001  
For: CLAMPING TOOL Attorney Docket No.: 81421-4532

**REQUEST FOR CERTIFICATE OF CORRECTION UNDER 37 C.F.R. § 1.322**  
**Certificate**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

NOV 30 2004

of Correction

Sir:

Patentees hereby respectfully request the issuance of a Certificate of Correction in connection with the above-identified patent. The corrections are listed on the attached Form PTO-1050, submitted in duplicate. The corrections requested are as follows:

On the title page, Item (73) Assignee, after "Låsby", please delete "(DE)" and insert -- (DK) --. Support for this change can be found on the Issue Fee Transmittal where the residence data to be printed on the patent is indicated as "LÅSBY, DENMARK".

At column 6, line 26 (claim 5, line 25), after "connection which", please delete "an" and insert -- in --. Support for this change can be found in application claim 5.

The requested corrections are for errors that appear to have been made by the Patent Office. Therefore, no fee is believed to be due for this request. Should any fees be required, however, please charge such fees to Winston & Strawn LLP Deposit Account No. 50-1814. Please issue a Certificate of Correction in due course.

Respectfully submitted,

11/24/04

Date



Allan A. Fanucci, Reg. No. 30,256

**WINSTON & STRAWN LLP**  
**Customer No. 28765**

212-294-3311

UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION

PATENT NO.: 6,817,603 B2  
DATED: November 16, 2004  
INVENTORS: Kofod

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title Page:

Item (73), Assignee, after "Låsby", delete "(DE)" and insert -- (DK) --.

Column 6:

Line 26, after "connection which", delete "an" and insert -- in --.

UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION

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DATED: November 16, 2004  
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Page 1 of 1

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US006817603B2

(12) **United States Patent**  
**Kofod**

(10) Patent No.: **US 6,817,603 B2**  
(45) Date of Patent: **Nov. 16, 2004**

## (54) CLAMPING TOOL

(75) Inventor: **Bent Karsten Kofod, Kalundborg (DK)**(73) Assignee: **Danpres A/S, Låsby (DE)**

( \*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/930,239**(22) Filed: **Aug. 16, 2001**

## (65) Prior Publication Data

US 2002/0020953 A1 Feb. 21, 2002

## Related U.S. Application Data

(63) Continuation of application No. PCT/DK00/00064, filed on Feb. 17, 2000.

## (30) Foreign Application Priority Data

Feb. 17, 1999 (DK) ..... 1999 00206

(51) Int. Cl. <sup>7</sup> ..... **B25B 1/14**(52) U.S. Cl. ..... **269/228; 269/201**

(58) Field of Search ..... 269/228, 237, 269/201, 236, 238

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Danish Search Report for PA 1999 00206 dated Dec. 10, 1999.

\* cited by examiner

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## (57) ABSTRACT

A clamping tool serving for clamping a workpiece on a support by a bar system constructed of a number of mutually pivotal bars comprising an activation bar for at operation making the bars pivot mutually between an initial position and locking position, a clamping bar having at least one clamp shoe for pressing against the workpiece in the locking position of the bar system, and a base for mounting the bar system on the support. The bar system furthermore comprises two toggle joints arranged to simultaneously or almost simultaneously assume their dead point positions when the bar system at activation is taken from the initial position to the locking position. In the dead point positions the two toggle joints form an angle with each other. Thereby the clamping tool according to the invention is rendered capable of simultaneously acting on a workpiece which is to be clamped on a support with compressive forces in at least two directions so that the number of the clamping tools required for a given task can be reduced by one half compared to the number that is required when conventional clamping tools are used.

22 Claims, 2 Drawing Sheets

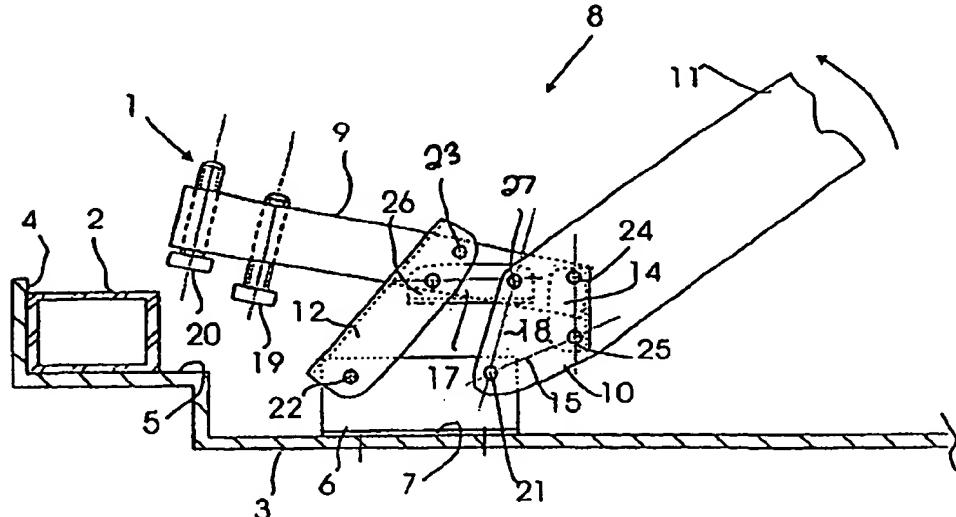


FIG. 3 shows that the activation bar 10 of the bar system is constructed as a fork which in order to form a good handle is more narrow at the top. It is furthermore shown that the base 6 is shaped as an inverted U with two fastening flaps 7 extending out to each their side from the U.

The clamping bar 9 consists in the case shown in FIG. 4 of a bent flat bar having two legs 28 and 29 that at the end near the clamp shoe leave a gap 30 between them for taking up the clamp shoes while the legs at the other end are placed close together and thereby forming a shank 31 for fitting in 10 between the rest of the bars. In the shank are holes for the swivel pins 23 and 24.

In one exemplary embodiment, the bar system 8 includes a first swivel connection 21 for pivotally journaling one end of the activation bar 10 in the base 6 while the other end of the activation bar 10 is free and serves as handle 11 of the clamping tool. A rocking bar 12 is pivotally journalized in the base 6 via a second swivel connection 22 which is nearer to the clamp shoes 19, 20, than the first swivel connection 21. The other end of the rocking bar 12 is pivotally journalized in the clamping bar 9 via a third swivel connection 23. A first toggle joint 13 has a first joint 14 which is pivotally journalized in the clamping bar 9 via a fourth swivel connection 24, located farther from the clamp shoes 19, 20 than the third swivel connection 23. The other end of the first joint 14 is pivotally journalized in the activation bar 10 via a fifth swivel connection 25. The first toggle joint 13 also has a second joint 15 consisting of the part of the activation bar 10 that is extending from the fifth swivel connection 25 to the first swivel connection 21. A second toggle joint 16 has a first joint 17 which at one end is pivotally journalized in the rocking bar 12 and/or clamping bar 9 via a sixth swivel connection 26, and at the other end is pivotally journalized in the activation bar 10 via a seventh swivel connection 27. When the clamping tool is in the locking position, the seventh swivel connection 27 is nearer the clamp shoes 19, 20 than the first swivel connection 21 and the fifth swivel connection 25. The second toggle joint also includes a second joint 17 consisting of the part of the activation bar 10 that is extending between the seventh swivel connection 27 and first swivel connection 21.

What is claimed is:

1. A clamping tool for clamping a workpiece by means of a bar system constructed of a number of mutually pivotal bars and comprising an activation bar for making the bars pivot mutually between an initial position and a locking position, a clamping bar having at least two clamp shoes for pressing against the workpiece in the locking position, and a base for mounting the bar system on the support, wherein the bar system furthermore comprises at least two toggle joints each toggle joint comprising two joints pivotally connected to one another, said two toggle joints arranged to substantially simultaneously assume a dead point position when the bar system is taken from the initial position to the locking position, and further wherein said two toggle joints form an angle with each other in the dead point positions.

2. The clamping tool according to claim 1, wherein the two joints of each toggle joint together form an angle than points its point in the opposite direction of the at least one clamp shoe in the initial position of the bar system.

3. The clamping tool according to claim 1, wherein the two joints and respectively of each toggle joint together form an angle that point its point in a direction towards the at least two clamp shoes in the locking position of the bar system.

4. The clamping tool according to claim 3, wherein the angle that the two joints of each toggle joint form together

in the locking position of the bar system is between about 175° and about 180°.

5. The clamping tool according to claim 1, wherein the bar system comprises:

- 5 a first swivel connection for pivotally journaling a first end of the activation bar in the base while a second end of the activation bar is free and serves as handle for the clamping tool;
- a rocking bar which at a first end is pivotally journalized in the base via a second swivel connection which is nearer the at least two clamp shoes than the first swivel connection and at a second end is pivotally journalized in the clamping bar via a third swivel connection;
- a first toggle joint having a first joint which at a first end is pivotally journalized in the clamping bar via a fourth swivel connection which is farther from the at least two clamp shoes than the third swivel connection, and at a second end is pivotally journalized in the activation bar via a fifth swivel connection, and a second joint consisting of the part of the activation bar that is extending from the fifth to the first swivel connection; and
- a second toggle joint having a first joint which at a first end is pivotally journalized in one of the group consisting of the rocking bar and the clamping bar via a sixth swivel connection, and at a second end is pivotally journalized in the activation bar via a seventh swivel connection which in the locking position of the clamping tool is nearer the at least two clamp shoes than the first and fifth swivel connection, and a second joint consisting of the part of the activation bar that is extending between the seventh and the first swivel connection.

6. The clamping tool according to claim 5, wherein the third and the sixth swivel connection coincide.

7. The clamping tool according to claim 5, wherein the sixth swivel connection is placed on the rocking bar between the second and the third swivel connection.

8. The clamping tool according to claim 1, wherein the first and the second toggle joint pass the dead point positions simultaneously when the bar system is taken from its initial position to its locking position.

9. The clamping tool according to claim 1, wherein the first joint of the first and second toggle joint respectively is shaped as a U having a bottom and two sides.

- 10. A clamping tool comprising:
  - a base member;
  - a bar system mounted to the base member and comprising a plurality of mutually pivotal bars including:
    - an activation bar pivotally mounted to the base member and being provided with a handle member;
    - a rocking bar also pivotally mounted to the base member and operatively connected to the activation bar via a first toggle joint,
    - a clamping bar operatively connected to the activation bar via a second toggle joint and being pivotally mounted to said rocking bar, the clamping bar including at least two clamp shoes;
- wherein the first toggle joint comprises a first joint pivotally connected to a second joint, and the second toggle joint comprises a first joint pivotally connected to a second joint;
- further wherein the first and second toggle joints substantially simultaneously assume respective dead point positions, when the bar system is moved from a first, unlock position to a second, locked position, and the first and second toggle joints form an angle with respect to one another when in the dead point positions.

Day : Tuesday  
Date: 11/30/2004

Time: 12:08:19

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